

The Future of our British Flora

I MUCH fear that the botanists of 1977, when roaming in search of specimens, will find it much more difficult to collect a varied herbarium, and that the poets of that period will be unable to obtain gratification from the sight of many interesting and beautiful plants which are already fast becoming rare and in a short period will likely be extinct with us.

Indeed the very curiosity to learn something more about botany, the teaching of which is now included as a "special subject" in our elementary schools, laudable as it is, has a tendency to hurry forward the extinction of rare forms, the collecting and recognising of which is almost a passion with beginners and much preferred to the slower and more instructive work of becoming thoroughly acquainted with what is common or widely diffused.

A few reminiscences culled from my experience will make plain what I mean. No one who has paid attention to the flora around a great and fast-increasing city such as Glasgow but must be struck with the extinction, in twenty or thirty years, of almost everything that used to be rare in the country district around. Showy flowers, such as the great mullein and the foxglove, are the first to suffer. They are like the large game in a newly-colonised country. In vain you look for them on the wayside of any well-macadamised road. They possess the fatal gift of beauty, and are either rooted out to perish miserably in a smoky garden, or destroyed from mere wantonness. A few days ago I visited the romantic ruins of Crookston Castle, about four miles from Glasgow, but I looked in vain for the common arum which, being rare in Scotland, made a visit to the ruins still more interesting when it flourished there healthily about twenty years ago.

In one single spot in Renfrewshire did I know of the existence of a few plants of the lizard orchis, but on making to see them after a long absence, I learned that the very last plant had been rooted and taken off this season by a schoolmaster eager to teach his pupils botany. Indeed, when an Edinburgh professor's class was about to visit a well-reputed floral locality this summer, I went to the farmer upon whose grounds the bird's-nest orchis grew, and implored him that, when the living wave passed by, he was not to betray to any student that alone in a wide district he was the possessor of so rare a treasure, and I believe my salutary warning prevented it from being all dug out.

In my own parish the wall-rue spleenwort is represented by a single plant, and on the walls of a castle in a neighbouring district it grows no further down than human hands can reach. Even such common ferns as the royal osmund, the green spleenwort, and the parsley fern are completely lost to some districts within my recollection, and many of your readers could give other instances to the same point.

Will the flora of the future then tend to a dull uniformity so that only a limited number of widely-diffused species shall carpet the earth? To neutralise this tendency we have no doubt many escaped garden plants which in process of time get established on our waysides and unoccupied spaces. I have even known the case of the successful introduction of wild flowers formerly unknown to a district, and in my own parish I was pleasantly surprised to find, well-established in one locality, the field allium, the seeds of which had been sown by a friend, who obtained it in Sussex, many years ago.

Tynron, Dumfriesshire

J. SHAW

The Towering of Wounded Birds

It is still supposed by some sportsmen and gamekeepers that the towering of a wounded bird is caused by an injury to its head. In some instances this may possibly be the case, if the lesion of the brain be not so severe as to cause instant death; more generally, however, towering seems to be the result of internal hæmorrhage and asphyxia. In the unconscious condition produced by the circulation of venous blood the bird rises as it continues to fly, and at last falls dead.

The following is a good example of this mode of death; it occurred a few days ago in the case of a partridge. I made a careful examination of the bird, and found a condition that confirmed the explanation that towering is due, not to injury to the head, but to internal hæmorrhage and its consequences:—

On October 2 a partridge (it was an old male bird) was fired at about forty yards. The bird flew about 450 yards after being hit, then towered high, and fell; it was picked up at about five poles, quite dead.

I examined it early next day; the feathers were all carefully removed. There was a slight wound in the neck; a pellet of No. 2 shot had perforated the skin, but had not penetrated or injured the subjacent tissues. There was a wound in the right pectoral muscle; the pellet had penetrated very slightly, and lay under the integument.

Two pellets had penetrated the abdominal cavity, one through the abdominal wall, the other through the bone. Both had passed forwards; one had slightly wounded, but not perforated, the stomach, and had then passed through the right lung; a large vessel had been divided. There was much blood clot in the cavity, and both lungs were congested and also collapsed.

On examining the trachea it was found that there were three blood clots—one near the bifurcation, a second about an inch above it, which firmly plugged the tube; a third, smaller, near the larynx. There was a small blood clot in the mouth and œsophagus—swallowed blood.

The heart and liver were uninjured, the brain was carefully examined; there was no injury; it was quite healthy and normal, except that the surface of the cerebellum had some slightly congested vessels. The spinal cord was uninjured; death caused by asphyxia and hæmorrhage. As the subject has been previously discussed, this case may be of sufficient interest for insertion in NATURE.

The pursuit of sport gave an opportunity of elucidating a point of some physiological interest that might not have been permitted to that of science.

J. FAYRER

Meteors

ON Tuesday evening, October 2, at 8.59 P.M., whilst watching for shooting stars, I saw a fine meteor. At first scarcely brighter than a first magnitude star, it suddenly increased to the apparent size of Venus when about three parts of its path had been traversed, and then it appeared to explode with remarkable brilliancy. The motion was rather slow, and just in the place where its maximum was attained, it left a short luminous streak that I could trace as a faint nebulous patch on the sky for about three and a half minutes, drifting some five degrees away from the place it first occupied, and gradually dying out until I finally lost it amongst the small stars of Cassiopeia. It had moved from R.A. 346°, Dec. 57° N. to R.A. 352°, Dec. 54° N. The position of the meteor's course as I observed it was from the star β Cephei to the direction of (and below) α Andromedæ.

On the following night, October 3, 8.38 P.M., another large meteor was observed here, falling with a very swift, short path a few degrees to the right of the Pointers in Ursa Major. It must have been as bright as Venus, for it gave a strong flash in a very foggy condition of the atmosphere. There was a bright streak left in its track for about fifteen seconds.

A third meteor, far brighter than either of the two preceding, was recorded on Monday, October 8, at 11.50 P.M., and estimated to be twice as brilliant as Venus. Its path was nearly vertical, close to the eastern horizon, and probably directed from a radiant near δ Tauri, at R.A. 77°, Dec. 31° N. The sky was brightly illuminated with its intense lustre at the moment of appearance. There was a short streak visible for three seconds, and this, as in the two previous cases, served accurately to indicate the direction of its path.

The following were the exact courses of these large meteors and of a few others seen recently by me:—

Date, 1877.	Time.	Mag.	Began	Ended.	Path.	Notes.
			R.A. Dec.	R.A. Dec.		
Sept. 15	12 21	...	56° 0	55° 6	6	{Streak 4 sec., rapid.
"	15 30	...	139+78	282+87	15	{Streak, rapid.
"	16 14 42	...	73+5	60+5	16	{Streak, rapid.
Oct. 2	8 59	...	325+67	354+48	24	{Streak 3½ min., slowish.
"	2 9 46	...	203+40	198+36	6	Slow.
"	3 8 38	...	155+64	152+55	10	{Streak 15 sec., rapid.
"	7 9 14	...	310+60	319+55½	6½	{Slow streak, near radiant.
"	8 11 50	2 x ♀	109+17	116+12	8	{Streak 3 sec., very swift.
"	8 13 35	...	46+50	346+32	47	{Streak 25°, not rapid.
"	15 16 25	...	222+83	263+76	10	{Streak 30°, very rapid.
"	16 13 18	...	105+39	116+50	13	{Streak 5° 3 sec., rapid.
"	17 16 28	...	150+54	186+56	20	Streak, rapid.
"	18 16 38	...	26+45	1+41	19	Streak, rapid.

The fine weather prevailing this month and during part of September allowed me to maintain long watches for shooting stars as follows:—

September	4	watched during	4½	hours and saw	37	meteors.
"	5	"	"	"	33	"
"	7	"	"	"	38	"
"	15	"	"	"	58	"
"	16	"	"	"	59	"
October	2	"	"	"	37	"
"	3	"	"	"	35	"
"	4	"	"	"	55	"
"	5	"	"	"	31	"
"	8	"	"	"	105	"
"	16	"	"	"	83	"
"	17	"	"	"	70	"

Giving an aggregate watch of 57 hours and 641 meteors visible for September 4–October 17; but this merely relates to a portion of the work, for I have only included in this list those nights when I watched for long periods together.

From these numerous observations I was enabled to deduce many radiant points, and have selected a few of the most important:—

No.	Date.	R.A. Dec.	No. of l's.	Max. dates.
1.	September	61 + 36	15 meteors	Sept. 7 and 15
2.	Sept. and Oct.	85 + 54	26	Sept. 5 and Oct. 5
3.	Sept. and Oct.	109 + 38	20	October 8
4.	Sept. and Oct.	220 + 78	18	September 15
5.	Sept. and Oct.	60 + 85	15	October 2-8
6.	September	87 + 34	10	September 16
7.	Sept. and Oct.	103 + 12	27	October 8
8.	October	133 + 79	22	October 3-4
9.	October	310 + 77	17	October 3-4
10.	October	225 + 52	10	October 2
11.	October	133 + 21	18	October 15
12.	October 15-20	92 + 15	57	October 18

The last position is that of the well-known October shower, the *Orionids*. Several of the above radiants are probably new, and it is noteworthy that No. 8 agrees very closely with the radiant and date (R.A. 134°, 77° Dec. N., October 7 +) of Comet II., 1825, as calculated by Prof. A. S. Herschel.

Ashleydown, Bristol, October 22 W. F. DENNING

A METEOR of unusual brilliancy was seen by the passengers in the train from Exeter to Bristol, about 6.15 P.M. yesterday. The train was at the time about two or three miles south of Weston Junction. As nearly as I could judge, the meteor made its first appearance at an altitude of about 35°, and 4° or 5° south of west, and moved rapidly towards the horizon almost in a vertical line. The colour was a greenish white, and the train lasted about fifteen seconds.

JOHN L. MCKENZIE

Independent College, Taunton, October 20

LAST Friday evening (October 19) we in Aberystwith saw a very beautiful meteor. It was ten minutes past six in the evening, when as I was walking along the shore and looking seaward (west), I saw the meteor rapidly descending as a pear-shaped body of red, yellow, and purple light, increasing much in brightness till it reached about twenty feet, as it looked, from the sea surface, when it suddenly and completely disappeared. Its track seemed a part of it—a tail to it—being at first a pale golden light continuous with the body of the meteor below, extending vertically up and ending rather abruptly above.

This narrow band of light lived complete for a short time, but after one minute most of the track had become a white or slightly grey fleecy cloud about a foot broad and three yards long, as it appeared, only its central part remaining bright as a golden nucleus to the cloud.

By two minutes atmospheric currents had bent the vertical cloud into an arc, the extremities turned to the north with the bright nucleus still distinct. Gradually the nucleus disappeared, but the cloud was still visible for a quarter of an hour, when the increasing dusk of the evening helped to obscure it.

Its course appeared exceedingly rapid, and the brightness was such that a passer-by who did not see the meteor itself, said that the place was lit up "like lightning."

Weather dull and wet, but Friday evening was fine.

University College of Wales, WALTER KEEPING
Aberystwith, October 20

Curious Phenomenon during the Late Gale

THE following may perhaps be of interest to your readers. At about 6.50 P.M. on the night of Sunday the 14th inst., I was

walking in a south-easterly direction through the village of Lower Tooting, when I suddenly saw fall from the sky what looked like a huge ball of green fire. What struck me especially was its size, its vivid colour, and also the strange noiselessness of its fall. It seemed to come from a part of the sky somewhere near where Jupiter was then visible, and to fall not a hundred yards from me. This, I fear, is the most accurate information I can give. It took me so completely by surprise that I rubbed my eyes and wondered whether I had not been dreaming, a supposition which seemed to be supported by the indifference displayed by the numerous passers-by in the face of so extraordinary a phenomenon. Indeed I should hardly have thought seriously of the matter again had I not heard of a letter in the *Times* last Monday, describing a very similar phenomenon observed at Brixton some twenty minutes later on the same evening. This and other reports of a like nature, which seemed to imply that the atmosphere was in a somewhat unusual condition, before and during last week's storm, led me to think it worth while to lay before you, and if it so pleases you, before the readers of NATURE, what I at any rate have a strong conviction that I saw on the night in question.

G. A. M.

Wine-Coloured Ivy

THE question has been discussed of late whether the ancient Greeks had an acute and true sense of colour. I remember once to have seen the remark that Sophocles shows his want of colour-sense by speaking of wine-coloured ivy. Now this really shows how true his perception of colour was. I enclose two ivy leaves which I have gathered to-day off a wall; I could have gathered plenty of the same colour, which, as you will see, is claret colour.

JOSEPH JOHN MURPHY

Old Forge, Dunmurry, co. Antrim, October 21

OUR ASTRONOMICAL COLUMN

THE SATELLITES OF MARS.—In No. 2,161 of the *Astron. Nach.*, Prof. Asaph Hall has published his measures of both satellites from the dates of their discovery to September 16, though the observations are not completely reduced, differential refraction and the small corrections to refer the measures to the true centre of the planet or the corrections for the gibbous phase having yet to be applied. Prof. Hall intends to make a thorough discussion of the observations taken during the present opposition, and requests other astronomers to forward to him, at Washington, copies of any they may succeed in making.

Subjoined are a few positions of the inner satellite calculated from elements which represent roughly Prof. Hall's observations from August 17 to September 16, as the following selected dates will show:—

	Error in Pos.	Error in Dist.	Observed Pos.
Aug. 17	... - 1'1	... + 2'1	73
" 26	... + 3'5	... - 2'7	253
Sept. 1	... - 2'0	... - 2'5	250
" 4	... + 1'1	... + 1'7	69
" 14	... - 1'5	... + 1'2	67

There is perhaps a sensible ellipticity of orbit. The period adopted is 7h. 39m. 13s.

For the outer satellite the elements used for the last ephemeris in this column have been again employed; they agree closely with measures taken by Mr. Common at Ealing on October 16. It appears probable that Mr. Common saw the inner satellite about 9 P.M. on October 17, the calculated and estimated positions sufficiently according.

Inner Satellite.				Outer Satellite.			
8h. G.M.T.							
Oct. 26	... Pos. 152	... Dist. 9		Pos. 91	... Dist. 44		
" 27	... " 91	... " 17		" 213	... " 31		
" 28	... " 69	... " 22		" 256	... " 55		
" 29	... " 37	... " 12		" 324	... " 22		
" 30	... " 306	... " 10		" 64	... " 51		
" 31	... " 263	... " 19		" 103	... " 33		
Nov. 1	... " 242	... " 20		" 224	... " 34		
" 2	... " 194	... " 9		" 262	... " 47		